

CLIMATOLOGICAL DATA FOR JUNE, 1912.

DISTRICT No. 11, CALIFORNIA.

Prof. ALEXANDER G. MCADIE, District Editor.

GENERAL SUMMARY.

June, 1912, was not as cold as June, 1911, or June, 1910, but nevertheless was cooler than the average June. The month resembled the preceding month and was in many respects more like an average May than an average June. There was more rain than usual, which was of decided benefit, since the seasonal rainfall was deficient. There was less cloudiness and less fog along the coast than usual. There were no strong north winds, which when they do occur at this time of the year are warm and dry. It was extremely fortunate that none of these hot spells occurred, for the ground had comparatively little surface moisture and a desiccating wind of 24 or 48 hours' duration would have caused great damage to the staple crops. While the rainfall for June was above the normal and was well distributed geographically, the total seasonal amounts are still much below the normal, there being a long dry period during the winter and early spring months, and the snow cover was less extensive than usual. At the end of the first week in June snow had disappeared from the 7,000-foot level or remained only in patches on the summits and in the canyons. At the same date last year there was nearly 2 feet of snow on the ground at the same elevations. The supply of water while not abundant is holding out remarkably well. As anticipated in April, the season has been an early and an open one, and trails in the mountains over the passes were open from two to three weeks earlier than is usual. Mining and power operations have been carried on advantageously and there has been no complaint from irrigationists and stockmen.

The month began with pressure distribution favorable for north winds and warm weather. June 3 was the warmest day at San Francisco since June 29, 1909, the maximum temperature being 93°. At Mount Tamalpais the temperature reached 90°, or, in other words, it was warmer at the lower station, which is an unusual condition in this locality in June during a warm spell. In the Great Valley of California temperatures reached 106°, and a maximum of 103° was recorded at Sacramento June 3 at 6 p. m. The warm spell lasted about three days, moderating gradually.

A marked change in the pressure distribution occurred on June 6, and conditions were favorable for cloudy, cooler weather and light thunderstorms in the Sierra. A rainy period began June 11 and showers occurred in central and northern counties at intervals until the 14th. About the middle of the month there was a return to the dry, warmer type with moderate north winds. Fortunately the high pressure areas moved eastward rather than southeastward and consequently the weather while warm was not excessively hot. Temperatures in the

Great Valley on the 18th and 19th ranged from 94° to 104°. Temperatures 10° higher probably would have occurred if the high-pressure area had moved southeastward. There was a quick fall in temperature on June 20 with considerable cloudiness and conditions favoring rain. The rain came June 23, and moderately high south-to-southeast winds prevailed off the central coast. Small craft warnings were issued for San Francisco Bay and a southwest warning was displayed at Point Reyes. The display of signals for southerly winds is unusual at this time of year.

The weather continued unsettled until the 25th, but the rest of the month was without any features of special interest.

TEMPERATURE.

The temperature for the State was 1° below the normal. The following table gives the mean temperature for California for each June during the time for which records have been kept:

Year.	Mean.	De-par-ture.	Year.	Mean.	De-par-ture.
	°F.	°F.		°F.	°F.
1897.....	69.8	+ 0.8	1905.....	67.5	- 1.5
1898.....	71.3	+ 2.3	1906.....	66.7	- 2.3
1899.....	71.5	+ 2.5	1907.....	66.1	- 2.9
1900.....	71.4	+ 2.4	1908.....	66.0	- 3.0
1901.....	70.5	+ 1.5	1909.....	68.1	- 0.9
1902.....	70.2	+ 1.2	1910.....	67.3	- 1.7
1903.....	70.9	+ 1.9	1911.....	66.7	- 2.3
1904.....	71.1	+ 2.1	1912.....	68.0	- 1.0

The highest temperature recorded was 120° at Greenland Ranch on the 5th. It may be noted that Greenland Ranch is a new station, located in Death Valley, and that the temperatures recorded at this point will probably be as high if not higher than at any other point in the United States. Heretofore reports have been available from stations in the Mojave Desert and in the Colorado Desert, but not available from Death Valley. The highest temperature reported at any station in California last June was 113° at Palm Springs on the 11th. The highest temperature at Palm Springs this year was 113° on the 2d. The lowest temperature was 20° at Tamarack on the 1st. The lowest temperature during June, 1911, was 18° at Tamarack on the 23d. This was almost the same as in June, 1910.

The highest mean temperature was 92° at Bagdad. The next highest was 90.2° at Greenland Ranch. The former station has an elevation 784 feet above sea level, while the latter is 178 below sea level. The lowest mean temperature was 44.4° at Tamarack. The lowest monthly mean in June, 1911, was 41.6° at Tamarack.

PRECIPITATION.

The average precipitation for California for June with departures from the normal is as follows:

Year.	Mean.	De-par-ture.	Year.	Mean.	De-par-ture.
	Inches.	Inches.		Inches.	Inches.
1897.....	0.46	+0.15	1905.....	0.07	-0.24
1898.....	.25	-.06	1906.....	1.05	+.74
1899.....	.57	+.36	1907.....	1.02	+.71
1900.....	.19	-.12	1908.....	.17	-.14
1901.....	.01	-.30	1909.....	.19	-.12
1902.....	.10	-.20	1910.....	.05	-.26
1903.....	.07	-.24	1911.....	.15	-.16
1904.....	.04	-.27	1912.....	.49	+.18

The greatest monthly precipitation was 2.80 inches at Edgewood, or 1.50 inches more than the heaviest monthly amount reported during June, 1911. At 63 stations there was no rain during the month.

SNOWFALL IN THE MOUNTAINS.

The snowfall was light during June. Only patches of snow remained on ground at high levels after the 7th and the snow cover may be said to have disappeared at the end of the first week. On the 23d there was a fall of about 1 inch, but this disappeared within 24 hours.

SUNSHINE.

The following table gives the total hours of sunshine and percentages of the possible:

Stations.	Hours.	Per-cent-age-of pos-sible.	Stations.	Hours.	Per-cent-age-of pos-sible.
Eureka.....	164	36	Sacramento.....	329	74
Fresno.....	403	92	San Diego.....	245	57
Los Angeles.....	291	68	San Francisco.....	301	68
Mount Tamalpais.....	273	62	San Jose.....	351	80
Red Bluff.....	328	73	San Luis Obispo.....	299	69

There was less sunshine during the current June than during June last year and much less than during June, 1910.

NOTES ON THE RIVERS OF THE SACRAMENTO AND LOWER SAN JOAQUIN WATERSHEDS DURING JUNE, 1912.

By N. R. Taylor, Local Forecaster.

Sacramento watershed.—The average stages of all streams in this watershed were much below those usually maintained during the month of June. In no case, however, were the rivers as low as during the corresponding month in 1910.

The upper Sacramento River remained practically stationary, but from Colusa to Walnut Grove the river fell steadily during the entire month, the ranges between the stages of the first and last dates being 7.1, 8.2, and 7.8 feet, respectively, at Colusa, Knights Landing, and Sacramento City.

Some rain fell during the month in the drainage basins of all streams, but with the exception of the American River at Folsom, which rose slightly over 2 feet during the 24 hours ending at 7 a. m. of the 13th, the rainfall had little effect on stream flow.

Lower San Joaquin watershed.—The rivers of this watershed averaged from 1 foot to over 3 feet below the normal for the month. There was a notable absence of the usual June freshets.

Melting snow slightly increased the run-off of the tributaries of the San Joaquin during the first few days of the month and resulted in a noticeable swell in this river during the latter part of the first decade, otherwise the effect of snow water was not apparent. By the middle of the month a general fall was in progress throughout the lower San Joaquin drainage basin.

Conditions now indicate that the extreme low-water stages will be reached much earlier than usual in this watershed.

NOTES ON THE STREAMS OF THE UPPER SAN JOAQUIN WATERSHED.

By W. E. Bonnett, Local Forecaster.

A somewhat better stage of water was maintained in the streams of the upper San Joaquin watershed during June than the low stages of May indicated as being probable. Of the six years' record, the stages for May, 1912, were the lowest with the one exception of May, 1908, while the June stages this year are higher than those of 1908 and 1910 also. However, the excess over the mean stages of 1910 is not considerable.

The mean of the daily gage readings at Merced Falls for June was 1.7 feet as compared with a six-year average of 2.1 feet, the daily stages ranging from 3.1 feet on the 3d and 4th to 0.7 foot on the 30th. At Friant on the San Joaquin the mean daily stage was 2.6 feet as compared with a six-year average of 4 feet. The extreme stages of 5 feet and 0.7 foot occurred on the same dates as at Merced Falls. At Firebaugh the mean monthly stage was 5.9 feet as compared with an average of 8 feet, 2.4 feet in 1908 and 4.8 feet in 1910. In the Kings River at Piedra the daily stages ranged from 12.2 feet on the 3d and 4th to 6.3 feet on the last day of the month, with a mean stage of 9.1 feet.

WEATHER AT POINT REYES LIGHT, CAL., DURING JUNE, 1912.

By James Jones, Observer.

The meteorological feature of the month was the record-breaking rain storm of June 23 and 24. A total of 1.49 inches fell during this storm, and 1.27 inches fell within a 24-hour period. Not only is this the heaviest 24-hour rainfall ever recorded here in June, but it is also the heaviest in any month since February, 1909.

PRESERVING MAMME CAPRIFIGS FROM FROST.

By G. P. Rixford.

The following article is an extract from an exhaustive paper on Recent investigations in fig culture and caprification, read by Mr. Rixford at the Fruit Growers' Convention, held at Santa Barbara, Cal., May, 1912. Only that portion relating to frost is given.

Dependence on the Blastophaga.—Everybody knows that the Smyrna fig industry is absolutely dependent on the blastophaga which carries the pollen grains from the stamens of the profichi caprifig to the pistillate flowers of the Smyrna fig. The preservation of the insect through the winter is therefore of paramount importance.

The severe frosts of the past winter proved very disastrous to the mamme crop, as well as to thousands of young trees throughout almost the whole of California and Arizona. First, abnormally low temperatures in November, prematurely defoliated the trees and left the figs exposed unusually early; then scanty rainfall during the fall and early winter reduced the vitality of the trees and was a further contributory

TABLE 1.—*Climatological data for June, 1912. District No. 11, California.*

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.						Sky.	Prevailing wind direction.	Observers.		
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmeted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
<i>Oregon.</i>																				
Klamath Agency.	Klamath.	4,169	3	54.0	-0.1	85	18	29	15†	49	3.75	+ 2.02	1.25	0	5	14	9	7	w.	N. D. Ginsbach.
Klamath Falls.	do.	4,100	22	59.0	-0.1	89	5	32	15	39	2.80	+ 2.02	0.91	0	8	12	6	12	nw.	Leland Moser.
Lakeview.	Lake.	4,825	28																	Bert Rice.
Merrill.	Klamath.	4,070	5	57.8		91	4	30	15	43	3.12		0.90	0	7	21	1	7	aw.	Mrs. Agnes Ritchson.
Yoncalla.	do.	4,146	4	56.0		90	4	28	15	48	1.61		0.57	0	10	12	15	3	aw.	Jacob Rueck.
<i>California.</i>																				
Alameda.	Alameda.	19	2	59.2		93	4	29	22	53	0.90		0.44	0	6	15	12	3	nw.	Chas. E. Sears.
Alturas.	Modoc.	4,480	8	59.2	+ 2.8	108	2	45	1†	59	T.	0.00	0	0	0	29	0	1	nw.	Prof. C. B. Towle.
Angiola.	Tulare.	208	12	75.2	+ 4.6	100	2	51	1	51	0.66	+ 0.55	0.66	0	1	26	0	4	Do.	Santa Fe Co.
Antioch **.	Contra Costa.	46	33	76.6	+ 1.5	78	2†	54	22	55	0.30	+ 0.20	0.30	0	1	20	3	7	nw.	Southern Pacific Co.
Aptos **.	San Cruz.	102	27	64.0	+ 1.5	78	2†	54	22	55									Do.	Dr. E. A. Crokat.
Arrowhead Springs.	San Bernardino.	2,000	3																	Southern Pacific Co.
Auburn.	Placer.	1,360	41																	T. S. Manning.
Avalon.	Los Angeles.	30	2	61.7		72	19	52	24†	18	0.00		0.00	0	0	29	1	0	w.	A. P. Griffith.
Azusa.	do.	540	10																	Santa Fe Co.
Bagdad.	San Bernardino.	784	9	92.0		113	5	66	23	32	0.00		0.00	0	0					E. L. White.
Bakersfield.	Kern.	404	23	76.7	- 2.7	103	10	55	24	33	0.00	- 0.03	0.00	0	0	30	0	0	Do.	Santa University.
Barstow.	San Bernardino.	2,105	9	76.0		110	4	50	17†	51	0.00		0.00	0	0	30	0	0	w.	Southern Pacific Co.
Berkeley.	Alameda.	317	25	62.7	+ 1.8	90	2	50	21	32	0.85	+ 0.65	0.61	0	4	13	8	9	sw.	Paul E. Lodge.
Biggs **.	Butte.	98	13	76.6	+ 3.1	106	4	57	21†	57	0.00	- 0.50	0.00	0	0	24	0	6	s.	Do.
Bishop.	Inyo.	4,450	17																	Victor Hope.
Bishop Creek.	do.	8,500	2	53.6		76	2†	24	23	35	0.60		0.60	6.0	1					Southern Pacific Co.
Blocksburg.	Humboldt.	1,700	6	62.0		104	6	38	15	49	1.17		0.56	0	4	10	7	13	s.	D. H. Carey.
Blue Canon.	Placer.	4,695	13	55.2	- 5.2	82	5	30	21	39	1.87	+ 0.56	1.10	0	2	24	0	6	Do.	A. J. Haun.
Blythe.	Riverside.	268	3	81.8		114	6	52	1	56	0.57		0.57	0	1	21	3	6	s.	M. D. Witter.
Branscomb.	Mendocino.	2,000	12	58.8		94	3	37	9	41	1.41	+ 0.02	0.64	0	4	18	7	5	n.	Mrs. M. D. Chambers.
Brawley.	Imperial.	105	3	84.1		111	4†	59	21	42	0.25		0	0	2				Carl Stevens.	
Burney.	Shasta.	3,300	2	58.2		98	11	31	16	50	1.64		0.86	0	3	9	11	10	sw.	J. E. Peck.
Cahuilla.	Riverside.	3,600	1																Southern Pacific Co.	
Calixto.	Imperial.	0	7	85.7		112	4†	62	22†	42	0.27		0.22	0	2	27	0	3	nw.	Do.
Caliente **.	Kern.	1,290	36	80.2	+ 1.3	105	4	60	24	34	0.00	- 0.13	0.00	0	0	23	0	7	Do.	Cal. Gas & Elect. Co.
Calistoga.	Napa.	363	40	60.3	- 9.3	100	1	50	10†	50	1.17	+ 0.81	1.14	0	2	14	0	16	w.	T. H. Johnstone.
Campbell.	Santa Clara.	217	15	64.0	+ 1.9	98	2†	40	22	49	0.33	+ 0.23	0.15	0	3	22	1	7	nw.	G. H. Stephenson.
Camptonville (near).	Yuba.	3,500	5	67.6		104	4	40	21†	42	1.35		0.80	0	3	20	4	6	s.	O. I. Westerburg.
Cedarville.	Modoc.	4,675	18	60.6	+ 0.2	90	19	34	21	39	0.76	+ 0.08	0.30	0	6	11	19	0	sw.	Southern Pacific Co.
Chico.	Butte.	189	42	72.7	- 4.4	111	4	45	24	49	0.12	- 0.29	0.12	0	1	20	1	9	n.	Do.
China Flat.	Humboldt.	600	3	67.6		101	4†	43	15	50	1.27		0.37	0	7	13	8	9	w.	Southern Pacific Co.
Chino **.	San Bernardino.	714	20	72.5	+ 0.3	98	19†	56	15†	58	0.00	- 0.03	0.00	0	0	21	9	0	Do.	Do.
Cisco **.	Placer.	5,938	41																	Prof. F. P. Brackett.
Claremont.	Los Angeles.	1,200	20	68.2	+ 1.0	98	15	46	23†	47	0.03	- 0.11	0.03	0	1	17	10	3	Do.	John O. Ogle.
Cloverdale.	Sonoma.	340	10	65.4	- 3.0	102	2	44	10	44	1.27	+ 1.00	0.45	0	4	25	0	5	s.	Union Oil Co.
Coalinga.	Fresno.			76.5		109	4	38	21	44	0.00		0.00	0	0	27	1	2	w.	Southern Pacific Co.
Colfax.	Placer.	2,421	41	64.0	- 7.2	95	4†	46	21	40	1.01	+ 0.31	0.71	0	2	20	1	9	n.	C. D. McComish.
Corning **.	Colusa.	60	9	71.7		102	3†	53	8†	37	0.17	+ 0.17	0.17	0	1	20	8	2	Do.	Southern Pacific Co.
Cuyamaca.	Tehama.	277	26	80.4	+ 3.1	106	4	58	21	58	0.21	+ 0.05	0.21	0	1	15	11	4	s.	L. L. MacQuarie.
Davisperville.	San Diego.	4,677	13	63.2	+ 2.8	84	2†	39	22	28	0.42	+ 0.17	0.27	0	2	21	6	3	e.	S. H. Brackett.
Deer Creek.	Yolo.	51	40	69.6	- 5.2	106	3†	43	21	51	0.74	+ 0.59	0.60	0	3	20	9	1	sw.	Cal. Gas & Elect. Co.
Del Monte.	Monterey.	3,700	5	58.0		9	4	34	21†	42	1.45		0.90	0	4	21	1	8	w.	Cal. Gas & Elect. Co.
Delta.	do.	25	13	63.6		79	3	52	19	42	0.11		0.11	0	1	21	3	6	n.	H. R. Warner.
Denair.	Stanislaus.	1,138	27	72.6	+ 1.1	96	16	52	12	37	0.14	- 1.20	0.10	0	2	22	4	4	s.	Southern Pacific Co.
De Sabla.	Butte.	2,500	8	64.2		96	3†	40	21†	39	0.65		0.65	0	1	14	12	4	sw.	Cal. Gas & Elect. Co.
Dobbins (near).	Yuba.	1,650	3	70.2		104	4	48	22	38	0.63		0.42	0	2	20	8	2	s.	Do.
Downieville.	Sierra.	3,150	1	61.4		96	3†	36	23	48	1.40		0.64	0	3	17	9	4	s.	J. T. Mason.
Dudley.	Kings.	595	7	77.9		109	2†	50	22†	44	0.00		0.00	0	0	27	0	3	sw.	Union Oil Co.
Dudleys.	Mariposa.	3,000	3	56.0		90	2†	32	23	42	0.20		0.20	0	1	23	4	3	nw.	W. H. Dudley.
Dunlap (near).	Fresno.	2,800	1	64.4		98	2†	41	20	42	0.00		0.00	0	0	23	3	4	Do.	U. S. Forest Service.
Dunnigan **.	Yolo.	65	35	80.3	+ 2.4	105	4	59	24	59	0.13	- 0.07	0.10	0	2	25	0	5	n.	Southern Pacific Co.
Dunsmuir **.	Siskiyou.	2,285	23	63.0	- 1.7	100	5	42	21	51	1.48	+ 0.54	0.43	0	8	21	5	9	w.	Do.
Durham.	Butte.	160	17	72.7	+ 0.1	102	4	49	8	42	0.20	- 0.09	0.15	0	2	18	5	7	s.	R. W. Durham.
El Cajon.	San Diego.	482	13	67.6	+ 0.4	91	2†	46	24	37	0.70	- 0.59	0.70	0	1	29	1	0	sw.	H. H. Kessler.
Electra.	Amador.	725	8	71.8		100	3†	50	15†	44	0.68	- 0.04	0.63	0	2	24	3	3	w.	Cal. Gas & Elect. Co.
Elsinore.	Riverside.	1,234	17	70.6	- 0.6	104	2	42	24	53	0.00	- 0.04	0.00	0	0	25	5	0	w.	A. F. Schult.
Emigrant Gap.	Placer.	5,230	38																Southern Pacific Co.	
Escondido.	San Diego.	657	18	68.6	+ 0.4	91	4†	44	24†	44	0.08	- 0.02	0.08	0	1	12	18	0	w.	A. R. Moon.
Eureka.	Humboldt.	64	26	54.8	+ 0.2	65	11	46	16	10	1.29	+ 0.11	0.53	0	7	8	10	12	nw.	U. S. Weather Bureau.
Farmington **.	San Joaquin.	111	33	80.6	+ 6.9	103	3	60	23†	37	0.39	+ 0.25	0.32	0	2	23	3	4	nw.	Southern Pacific Co.
Folsom.	Sacramento.	252	40	71.2	- 2.9	104	3	48	15	41	0.55	+ 0.32	0.30	0	2	24	2	4	s.	F. O. Hutton.
Fordyce Dam.	Nevada.	6,500	17	57.0		85	3	38	23	38	1.97	+ 0.20	0.82							

TABLE 1.—Climatological data for June, 1912. District No. 11—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.						Sky.	Prevailing wind direction.	Observers.		
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest 24 hours.	Total snowfall, unmeasured.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of overcast days.		
<i>California—Continued.</i>																				
Indio.	Riverside.	20	34	87.6	-0.7	114	4†	61	23	41	0.02	+0.02	0.02	0	1	26	4	0	nw.	F. N. Johnson.
Inskip.	Butte.	4,975	5	62.2		92	3†	36	21†	30	1.23		0.63	0	4	15	7	8		Cal. Gas & Elect. Co.
Ione*	Amador.	287	34																	Southern Pacific Co.
Jamestown.	Tuolumne.	1,471	9	69.1		98	1†	45	8	43	T.		T.	0	0	25	0	5		Sierra Railway Co.
Kennett.	Shasta.	730	73.4			107	3†	49	24	43	1.43		0.84	0	5	18	11	1	ne.	O. J. Egleston.
Kentfield.	Marin.	65	24	64.1		104	2	43	30	50	2.10	+1.63		3						Miss M. E. Parsons.
King City.	Monterey.	333	25	76.2	+12.6	112	3	54	21	54	0.00	-0.02	0.00	0	0	30	0	0	s.	Southern Pacific Co.
Lake Eleanor.	Tuolumne.	4,700	2																	O. J. Todd.
La Porte.	Plumas.	5,000	18	55.1	-1.1	86	4	33	23	37	1.57	-0.03	0.95	0	6	11	15	4	s.	Chas. W. Hendel.
Le Grand.	Merced.	255	12																	Santa Fe Co.
Lemon Cove.	Tulare.	600	17	71.8	-4.2	110	3	45	1	60	0.00	-0.09	0.00	0	0	27	3	0	w.	G. W. Sandidge.
Lick Observatory.	Santa Clara.	4,209	23	59.2	-0.8	84	3	35	21	22	0.44	-0.04	0.14	0	6	19	4	7	n.	The Director.
Livermore.	Alameda.	485	41																	E. G. Still.
Lodi.	San Joaquin.	45	30	71.3	+2.2	102	2†	50	21	43	0.35	+0.14	0.18	0	2	23	2	5	w.	Ezra Fiske.
Lone Pine.	Inyo.	2,728	7	70.1		98	3	35	23	50	0.00		0.00	0	0	28	2	0	s.	G. F. Marsh.
Long Valley.	Lessen.	4,400	3	63.0		92	19	35	16	46	0.53		0.22	0	6	10	6	14	sw.	A. G. Evans.
Los Angeles.	Los Angeles.	293	35	65.4	+0.9	83	18	52	24	26	0.00	-0.10	0.00	0	0	17	3	3	sw.	U. S. Weather Bureau.
Los Banos**.	Merced.	121	25	74.4	-1.0	102	2†	60	20†	27	0.00	-0.08	0.00	0	0	17	0	13	w.	Southern Pacific Co.
Los Gatos.	Santa Clara.	600	25	65.4	+0.6	102	3	44	10†	40	0.33	+0.24	0.18	0	3	19	6	5	n.	F. H. McCullagh.
McCloud.	Siskiyou.	3,410	5	57.2		87	4†	32	15†	43	1.46		0.78	0	6	15	12	3		F. F. Spencer.
Macdoel.	do.	4,258	5	54.3		89	4†	25	15	50	1.20		0.87	0	5	19	5	6	nw.	Butte Valley Land Co.
Madeline.	Lassen.	5,270	3	55.4		88	4	28	16†	48	1.14		0.32	0	7	14	7	9	nw.	J. H. Williams.
Magalia.	Butte.	2,321	8	66.9		100	4	41	20	43	0.59		0.29	0	4	20	4	6	se.	Butte Co. R. R. Co.
Mammoth Tank.	Imperial.	257	34	88.6	-3.9	113	4	60	22†	35	0.15	+0.15	0.15	0	1	27	0	3	w.	Southern Pacific Co.
Maricopa.	Kern.	640	25	75.7		105	4	50	22	35	0.11		0.11	0	1	25	2	3	e.	Union Oil Co.
Marysville.	Yuba.	67	41	72.3	-3.9	106	3	51	21†	47	0.32	+0.05	0.32	0	1	23	0	7	s.	Southern Pacific Co.
Mecca.	Riverside.	185	6	86.4		114	4†	62	21	41	T.		T.	0	0	25	5	0	nw.	E. A. Palmer.
Menlo Park**.	San Mateo.	64	34																	Southern Pacific Co.
Merced.	Merced.	173	38	76.4	+1.1	105	3	52	21	33	0.04	-0.08	0.04	0	1	24	6	0	nw.	Santa Fe Co.
Middlewater.	Kern.	1	81.4			114	19	46	25	58	0.00		0.00	0	0	26	4	0	n.	Union Oil Co.
Mill Creek No. 1.	Amador.	5	61.8			89	3	40	22	37	1.24		0.95	0	3	21	6	3	n.	Cal. Gas & Elect. Co.
Madera**.	Stanislaus.	660	21	72.5	+0.7	102	3	47	22†	36	0.47	+0.22	0.35	0	3	24	3	3	nw.	J. H. Southwick.
Majave.	Kern.	2,751	35											0	2					Do.
Mokelumne Hill.	Calaveras.	1,550	19	69.1	+1.0	99	3	43	21	44	0.90	+0.49	0.70	0	2	19	4	7		C. E. Prindle.
Mono Ranch.	Ventura.	3,210	6	62.1		93	4	36	24†	42	T.		T.	0	0	24	5	1	w.	Herbert Latrop.
Montague.	Siskiyou.	2,450	24	62.1	-4.8	95	5	33	16	52	1.68	+1.05	0.92	0	5	7	12	11	n.	I. E. Deboy.
Monterey**.	Monterey.	15	47	64.9	+4.1	78	2†	58	9†	12	0.12	+0.02	0.12	0	1	29	0	1	e.	Southern Pacific Co.
Monterio.	Kern.	4,500	13	63.4	-3.2	96	5	38	23	30	0.16	+0.03	0.16	0	1	20	2	3	nw.	John C. Knecht.
Mount Tamalpais.	Marin.	2,375	13	60.5	-3.6	90	3	43	20	27	1.20	+1.08	1.03	0	8	14	7	9	nw.	U. S. Weather Bureau.
Napa City.	Napa.	20	35	64.4	-0.2	104	1	44	23†	49	0.94	+0.73	0.57	0	2	11	19	0	s.	Southern Pacific Co.
Napa (S. H.)	do.	60	34	66.8	+1.4	101	3	49	21	42	0.89	+0.68	0.48	0	3	17	7	6	sw.	W. H. Martin.
Needles.	San Bernardino.	477	20	88.2	+0.9	108	5†	69	1	33	0.25	+0.24	0.25	0	1	27	0	3	se.	Santa Fe Co.
Nellie.	San Diego.	5,350	3	64.0		87	4†	33	23	50	0.18		0.18	0	1	30	0	0	sw.	T. O. Bailey.
Nevada City.	Nevada.	2,680	20	62.0	-0.7	96	3†	35	22	47	0.59	-0.08	0.35	0	2	18	8	4	se.	S. W. Marsh.
Newhall**.	Los Angeles.	1,200	35	71.8	+1.1	100	2†	60	20	T.		T.	0	0	28	0	2	sw.	Southern Pacific Co.	
Newman.	Stanislaus.	91	23	81.4	+4.9	104	2†	57	13	25	0.11	+0.05	0.10	0	2	25	0	5	n.	E. S. Wangenheim.
North Bloomfield.	Nevada.	3,214	15	66.2	+2.1	94	4	26	9	49	0.42	-0.49	0.42	0	1	22	2	6	sw.	J. R. McIntosh.
North Fork.	Madera.	3,000	8	66.1		98	4	31	11	53	0.06		0.06	0	1	23	7	0	nw.	U. S. Forest Service.
Oakdale**.	Stanislaus.	156	18	73.8	+1.9	105	3	56	23†	30	0.31	+0.10	0.31	0	1	25	2	3	nw.	Southern Pacific Co.
Oak Grove.	San Diego.	2,751	2			107	17	38	23	30	0.24		0.24	0	1					B. L. Johnson.
Oakland.	Alameda.	36	30	64.4	+2.9	91	2	51	18†	34	0.68	+0.38	0.56	0	4	15	8	7	w.	Chabot Observatory.
Oceanside.	San Diego.	60	2	67.5		76	17†	54	20	32	0.32		0.32	0	1	17	0	0	w.	H. D. Brodie.
Ojai Valley.	Ventura.	900	6	65.3		100	18	38	24†	49	T.		T.	0	0	26	3	1	sw.	W. H. Duncan.
Orland.	Glenn.	254	30	74.8	-3.9	109	4	48	22	46	0.12	-0.22	0.08	0	2	20	6	4	n.	U. S. Reclamation Service.
Orleans.	Humboldt.	520	9	70.9		106	4†	45	16	49	1.53	-0.48	0.48	0	10	12	0	18		F. T. Hale.
Oroville (near).	Butte.	250	23	73.1	-1.4	108	4	52	8†	45	0.25	-0.08	0.25	0	1	22	0	8	s.	E. D. Fairchild.
Palermo.	do.	213	21	70.9	-2.1	100	29	42	12	52	0.10	-0.25	0.10	0	1	11	13	6	n.	Western Pacific Co.
Palm Springs**.	Riverside.	584	23	84.5	-3.2	113	2	61	12†	37	0.00	-0.00	0.00	0	0	25	4	1	w.	Southern Pacific Co.
Pasadena.	San Luis Obispo.	827	22	66.2	-4.4	96	18	43	25	48	0.00	-0.01	0.00	0	0	26	4	0	sw.	E. D. Sorver.
Paso Robles.	San Luis Obispo.	500	20	66.2	-2.0	96	18	43	25	48	0.00	-0.03	0.00	0	0	26	4	0	sw.	Dr. F. W. Sawyer.
Peachland.	Somona.	190	16	62.4	-1.5	97	2	41	10†	46	1.57	+1.19	1.33	0	3	18	6	6	sw.	E. H. Parnell.
Placerville.	El Dorado.	1,875	23	65.6	-0.8	98	3	44	15†	44	0.80	+0.14	0.73	0	2					A. Baring-Gould.
Point Lobos.	San Francisco.	250	19	58.9	+2.6	88	2	47	19	32	0.84	+0.70	0.63	0	6	3	20	7	nw.	John Hyslop.
Point Reyes.	Marin.	490	20	54.2	+1.4	76	3	46	18	26	1.53	+1.28	1.27	0	5	9	6	15	nw.	U. S. Weather Bureau.
Porterville.	Tulare.	464	23	75.8	-3.0	107	3	54	14†	45	0.00	-0.11	0.00	0	0	20	10	0	sw.	Leslie McAuliff.
Quincy.	Plumas.	3,400	17	58.4	-2.4	91	4	27	27	50	1.01	+0.08	1.00	0	2	18	9	3	w.	U. S. Forest Service.
Red Bluff.	Tehama.	307	35	73.2	+2.5	105	4	50	24	35	0.55									

TABLE 1.—Climatological data for June, 1912. District No. 11—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.						Sky.	Prevailing wind direction.	Observers.		
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.			
<i>California—Continued.</i>																				
Seven Oaks.....	San Bernardino.....	5,000	2	60.4	-7.6	89	3	29	21	44	0.00	-1.39	0.00	0	0	27	1	2	w.	M. Lewis.
Shasta.....	Shasta.....	1,048	16	68.0	-7.6	102	3	39	15	43	2.08	+1.39	1.80	0	4	23	1	6	nw.	Dr. T. J. Edgecomb.
Sierra Madre.....	Los Angeles.....	1,400	15	66.8	-0.2	93	18	50	25	37	0.10	-0.15	0.10	0	1	9	19	2	s.	Mrs. A. E. Gregory.
Sierraville.....	Sierra.....	5,000	2	54.7	-	89	3	28	16	50	0.83	-	0.43	0	2	15	10	5	sw.	C. D. Johnson.
Sisson.....	Siskiyou.....	3,555	23	57.2	-5.3	88	4†	32	15	42	0.90	+0.26	0.60	0	3	13	13	4	n.	Southern Pacific Co.
Soledad **.....	Monterey.....	188	38	73.8	+8.3	100	1	60	29	40	0.00	-0.05	0.00	0	0	23	0	7	n.	Do.
Sonora.....	Tuolumne.....	1,825	24	69.0	-	97	4	44	22	40	0.47	+0.18	0.47	0	1	24	3	3	nw.	Chas. P. Jones.
Southeast Farallon.....	San Francisco.....	30	9	54.2	-	66	3	47	18	14	1.97	-	1.68	0	2	13	11	6	nw.	U. S. Weather Bureau.
Springville.....	Tulare.....	4,000	5	63.3	-	95	3	38	22	40	0.00	-	0.00	0	0	24	2	4	n.	D. L. Wishon.
Squirrel Inn.....	San Bernardino.....	5,280	2	61.0	-	92	6	36	23	42	0.00	-	0.00	0	0	28	0	2	n.	A. D. Frantz.
Stanwood.....	Butte.....	2,140	8	60.0	-	96	6	38	24	40	0.57	-	0.34	0	2	23	2	5	s.	Cal. Gas & Elect. Co.
Stirling City.....	do.....	3,525	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	do.	Butte Co. R. R. Co.
Stockton (S. H.).....	San Joaquin.....	23	41	70.2	+0.3	105	3	49	21	42	0.25	+0.13	0.18	0	2	23	3	4	nw.	State Hospital.
Storey.....	Madera.....	206	12	71.8	-0.5	106	3	46	22†	49	0.00	-0.01	0.00	0	0	27	0	3	n.	Santa Fe Co.
Suisun **.....	Solano.....	20	32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	do.	Southern Pacific Co.
Sulphur Banks.....	Lake.....	1,350	67.8	-	-	97	3	45	30	37	0.50	-	0.52	0	3	17	11	2	w.	J. T. La Bree.
Summerdale.....	Marietta.....	5,270	16	58.4	-1.4	85	3	33	23	27	0.50	+0.08	0.30	0	2	19	8	3	e.	Bertus Gude, jr.
Summit.....	Placer.....	7,017	39	44.0	-9.2	65	2	29	9†	31	0.20	-0.44	0.10	1.0	2	22	0	8	sw.	Southern Pacific Co.
Susanville.....	Lassen.....	4,175	23	59.0	-3.4	88	5	33	15†	41	0.78	+0.28	0.30	0	5	13	15	2	sw.	James Branham.
Tamarack.....	Alpine.....	8,000	6	44.4	-	72	19	20	1†	46	1.08	-	0.65	4.0	4	13	11	6	sw.	Cal. Gas & Elect. Co.
Tehachapi **.....	Kern.....	3,944	35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	do.	Southern Pacific Co.
Tehama **.....	Tehama.....	220	41	72.8	-4.8	108	4	50	12	29	T.	-0.27	T.	0	0	17	0	13	s.	Do.
Tejon Rancho.....	Kern.....	1,500	10	66.8	-	90	2	42	23†	29	0.00	-	0.00	0	0	0	0	0	s.	S. E. Bailey.
Three Rivers.....	Tulare.....	870	2	73.5	-	106	3	41	24	47	0.00	-	0.00	0	0	16	13	1	sw.	E. D. Barton.
Towle.....	Placer.....	3,704	26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	do.	Southern Pacific Co.
Tracy **.....	San Joaquin.....	64	32	75.9	0.0	105	3	58	12†	-	0.38	+0.21	0.29	0	2	15	11	4	nw.	Do.
Ukiah.....	Mendocino.....	620	19	66.4	+1.0	101	3	40	30	52	0.44	+0.10	0.28	0	3	18	6	6	nw.	Dr. Geo. McCowen.
Upper Lake.....	Lake.....	1,350	27	66.0	-0.7	101	3	39	30	48	0.32	+0.07	0.21	0	3	19	2	9	nw.	C. M. Hammond.
Vacaville.....	Solano.....	175	24	70.4	-0.6	107	2†	47	13†	49	0.00	-0.16	0.00	0	0	21	7	2	sw.	G. C. Coburn.
Valley Springs **.....	Calaveras.....	673	23	75.5	+1.4	102	3	62	22	-	0.51	+0.24	0.51	0	1	24	2	4	nw.	Southern Pacific Co.
Visalia.....	Tulare.....	334	24	70.2	-3.1	107	12	35	24	61	0.00	-0.10	0.00	0	0	30	0	0	do.	Santa Fe Co.
Warner Springs.....	San Diego.....	3,165	4	66.5	-	93	18	41	22	41	0.22	-	0.22	0	1	28	2	0	do.	Mrs. F. S. Sandford.
Wasco.....	Kern.....	336	12	75.4	+0.4	109	5	42	24	53	0.00	0.00	0.00	0	0	30	0	0	do.	Santa Fe Co.
Watsonville.....	Santa Cruz.....	23	16	56.0	-6.4	84	16	31	21	52	0.14	0.00	0.14	0	1	11	14	5	w.	U. S. Forest Service.
Weaverville.....	Trinity.....	62.8	-	-	-	96	4†	35	16	51	1.08	-	0.67	0	4	16	4	10	w.	M. E. Lathrop.
Wetechpec.....	Humboldt.....	1,700	2	60.2	-	94	4	38	15†	40	1.98	-	0.76	0	8	18	7	5	w.	Southern Pacific Co.
Westley **.....	Stanislaus.....	90	23	78.5	+0.9	104	3	55	23	-	0.70	+0.64	0.38	0	3	23	0	7	n.	William Lumbard.
Wheatland.....	Yuba.....	84	25	70.8	-0.6	102	3	50	21	38	0.28	0.00	0.20	0	2	19	7	4	s.	E. C. Mills.
Willows.....	Glenn.....	136	33	74.8	-2.1	110	4	46	13	45	0.19	+0.01	0.19	0	1	24	3	3	n.	J. P. Kelley.
Yosemite.....	Mariposa.....	3,945	8	62.6	-	94	5	32	23	51	0.14	-	0.06	0	3	27	0	3	s.	do.

*, b, e, etc., indicate respectively 1, 2, 3, etc., days missing from the record.

**Temperature extremes are from observed readings of the dry bulb; means are computed from observed readings.

† Also on other dates.

T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 2.—*Daily precipitation for June, 1912. District No. 11, California.*

TABLE 2.—*Daily precipitation for June, 1912. District No. 11—Continued.*

TABLE 2.—*Daily precipitation for June, 1912. District No. 11—Continued.*

TABLE 2.—*Daily precipitation for June, 1912. District No. 11—Continued.*

Stations.	Watershed.	Day of month.																													Total.		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
<i>California—Contd.</i>																																	
Tulare.....	San Joaquin																																0.00
Tustin (near).....	Coast.....																															0.00	
Ukiah.....	do.....																															0.44	
Upland.....	do.....																																
Upper Lake.....	Sacramento.....																															0.32	
Upper Mattole.....	Coast.....																															1.52	
Vacaville.....	Sacramento.....																															0.00	
Valley Springs.....	San Joaquin.....																															0.51	
Visalia.....	do.....																															0.00	
Warner Springs.....	Coast.....																															0.22	
Wasco.....	San Joaquin.....																															0.00	
Watsonville.....	Coast.....																															0.14	
Weaverville.....	do.....																															1.18	
Weitchpec.....	Klamath.....																															1.98	
West Branch.....	Sacramento.....																															0.88	
Westley.....	San Joaquin.....																															0.70	
West Point.....	do.....																															1.22	
West Saticoy.....	Coast.....																															0.00	
Wheatland.....	Sacramento.....																															0.28	
Willows.....	do.....																															0.19	
Yosemite.....	San Joaquin.....																															0.14	

* Precipitation included in that of the next measurement.

† Separate dates of falls not recorded.

|| Precipitation for the 24 hours ending on the morning when it is measured.

T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 3.—*Maximum and minimum temperatures for June, 1912. District No. 11, California.*

Date.	Lakeview, Oreg.		California.																									
			Alturas.		Barstow.		Branscomb.		Brawley.		Colusa.		Eureka.		Fresno.		Independ- ence.		Los Angeles.		Mount Tamalpais.		Nevada City.		Porter- ville.		Red Bluff	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.		
1.			87	36	108	58	88	51	105	66	96	60	57	-50	103	65	91	58	76	57	85	75	88	46	104	60	100	67
2.			87	39	105	55	93	53	107	66	100	65	58	48	106	69	95	56	77	57	90	74	94	47	106	61	99	68
3.			89	42	104	59	94	58	109	67	102	65	63	48	107	71	97	62	75	57	90	77	96	51	107	65	101	79
4.			93	41	110	59	91	59	111	69	102	67	65	49	105	73	97	63	74	56	81	74	96	53	104	64	105	70
5.			92	45	105	58	85	53	111	70	96	63	57	49	103	69	94	62	74	56	77	66	93	55	99	63	101	70
6.			90	48	103	60	78	50	111	78	87	62	56	49	97	66	93	62	71	57	69	46	85	50	95	60	92	67
7.			82	43	98	56	70	40	105	74	81	54	62	53	91	58	90	57	73	53	57	45	79	48	90	61	85	56
8.			80	34	93	60	71	41	101	60	81	53	57	53	85	57	90	54	74	54	50	46	77	42	90	59	81	55
9.			79	49	91	58	70	37	97	61	82	53	57	52	85	56	81	54	72	56	63	44	77	42	93	58	85	55
10.			85	38	94	57	69	38	97	63	88	54	58	52	89	56	84	54	72	56	70	50	79	45	96	60	92	60
11.			82	41	101	60	67	38	99	64	85	55	65	52	94	60	87	57	74	57	64	52	78	48	94	59	84	62
12.			71	51	92	54	56	48	100	65	81	62	63	55	78	62	78	62	68	57	56	47	60	53	86	58	76	64
13.			65	46	89	60	58	47	98	69	81	55	63	53	83	57	85	52	69	59	62	46	71	48	84	56	76	56
14.			60	40	90	58	62	42	99	62	79	54	58	51	83	57	88	59	71	57	61	44	72	50	85	54	76	58
15.			63	33	94	60	79	43	98	61	81	61	58	49	86	57	82	53	73	59	68	51	76	36	97	60	78	58
16.			78	39	87	54	85	46	98	67	89	57	61	46	92	59	79	48	75	59	76	58	85	44	100	63	88	58
17.			91	38	93	50	87	46	99	66	94	57	58	52	98	63	85	52	82	58	67	87	44	103	65	97	63	
18.			90	46	101	55	86	50	104	65	96	59	55	50	102	66	91	52	83	57	85	70	93	47	106	64	99	65
19.			91	44	103	56	75	43	104	67	96	63	58	50	104	68	93	56	77	59	76	49	90	48	87	61	98	66
20.			84	34	100	60	56	43	100	69	80	57	58	50	80	57	92	66	74	58	55	43	68	47	86	54	79	52
21.			52	33	90	55	59	44	90	59	75	55	58	47	78	51	82	53	73	58	56	43	64	39	83	55	72	52
22.			57	29	76	54	66	45	97	60	78	57	59	46	71	54	71	52	67	57	60	44	67	35	79	58	72	54
23.			64	43	81	50	58	42	-----	-----	70	54	58	51	74	51	69	52	68	55	46	44	56	39	90	54	60	54
24.			82	33	86	51	59	42	-----	-----	73	54	65	49	84	51	78	48	73	52	54	46	74	44	93	55	78	50
25.			82	40	96	53	61	41	104	65	80	54	60	52	85	56	75	52	54	47	75	42	92	58	80	57	78	57
26.			78	40	100	52	65	41	106	74	78	54	62	52	85	55	90	58	78	54	57	46	74	40	89	59	78	60
27.			78	40	98	58	72	42	106	74	86	55	58	52	90	56	90	52	82	59	69	50	81	38	87	56	88	58
28.			79	47	97	56	76	44	98	75	86	57	57	50	96	62	90	53	75	55	73	57	82	41	88	55	90	63
29.			79	39	91	58	72	44	84	72	87	58	59	50	93	64	85	54	81	55	67	54	74	45	89	56	86	64
30.			64	30	92	58	70	43	99	66	83	58	57	47	88	55	84	49	75	53	68	52	75	38	86	57	78	58
Mns.			78.5	40.0	95.6	50.4	72.6	45.1	101.3 ^b	66.9 ^b	85.7	57.7	59.3	50.2	90.5	60.0	86.5	54.9	74.4	56.3	67.4	53.6	78.9	45.1	92.7	58.9	85.8	60.6

Date.	California.																											
	Redlands.		Sacra- mento.		San Diego.		San Francisco.		San Jose.		San Luis Obispo.		Santa Barbara.		Santa Rosa.		Sisson.		Stockton.		Summit.		Susanville.		Yosemite.			
Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	
1.	99	55	99	68	68	60	80	58	94	55	77	53	68	56	92	53	82	54	100	64	59	35	84	43	90	45		
2.	99	55	98	68	68	58	93	58	99	56	78	48	68	55	96	58	81	52	104	66	65	36	86	47	91	48		
3.	98	55	103	69	69	68	59	86	60	99	59	77	62	67	55	99	62	82	45	105	68	57	36	84	46	97	46	
4.	96	54	93	64	66	58	70	53	88	57	75	51	67	55	78	43	88	48	96	69	59	35	87	46	98	46		
5.	89	54	87	58	66	66	59	63	53	81	55	68	54	68	56	72	55	88	50	90	58	60	36	88	51	94	49	
6.	88	54	72	56	66	60	59	53	78	51	66	56	54	65	56	64	53	88	46	79	58	62	38	86	50	88	50	
7.	85	51	75	53	67	59	56	55	75	52	66	51	70	55	70	54	78	53	83	46	78	53	63	35	82	47	86	46
8.	84	49	70	53	67	59	52	57	71	52	66	53	68	49	70	50	74	42	77	52	54	35	73	43	84	40		
9.	77	55	75	53	67	60	60	52	69	51	66	54	65	52	71	51	74	40	79	51	45	29	76	45	82	41		
10.	77	54	81	57	66	66	53	71	53	79	46	73	51	68	52	85												